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Applicant: John A. Krueger

Serial No.: 10/037,795

Filed: January 3, 2002

Docket No.: SPC - 6137

Title: BONE MARROW ASPIRATION DEVICE WITH CURVED TIP

IN THE CLAIMS

Please add claim 17.

Please amend claim 6 as follows:

1. - 5. (Cancelled)

- 6.(Currently Amended) A bone biopsy system comprising:
- an outer cannula defining a length from a proximal end to a distal tip;
 - a handle portion coupled to the proximal end of said outer cannula;
 - wherein said outer cannula is adapted to removably accommodate therein a biopsy aspiration device, said biopsy aspiration device being adapted to obtain a bone marrow sample and comprising:
 - an elongated cannula body having a length from a proximal end to a distal tip and defining a linear longitudinal axis, wherein said length of said elongated cannula body is greater than said length of said outer cannula;
 - a lumen running longitudinally through the interior of said cannula body, said lumen terminating at a proximal opening and terminating at a single laterally oriented distal opening immediately adjacent to the distal tip;
 - wherein said distal tip of said cannula body comprises an arcuate curved surface on the side opposite to said laterally oriented distal opening, said arcuate curved surface terminating at said distal opening.

- 7.(Original) The bone biopsy system according to claim 6, wherein said proximal end of the cannula body of said biopsy aspiration device further comprises an attachment structure for removably coupling an aspiration source.

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8.(Previously Presented) The bone biopsy system according to claim 7 wherein said attachment structure comprises a luer attachment.

9.(Original) The bone biopsy system according to claim 6 wherein the proximal end of said biopsy aspiration device comprises viewable indicia.

10.(Original) The bone biopsy system according to claim 9 wherein said viewable indicia comprises a marking indicating the position of the laterally oriented distal opening.

11.(Original) The bone biopsy system according to claim 6 further comprising a stylet adapted for removable insertion within said outer cannula.

12.(Previously Presented) A method of obtaining a bone marrow sample from a marrow sampling site in a patient comprising the steps of:

- (a) penetrating the cortex of a bone with an outer cannula having a stylet positioned within, the distal portion of said stylet extending beyond the distal end of said outer cannula, until the distal end of said outer cannula is surrounded by marrow;
- (b) removing said stylet from said outer cannula;
- (c) inserting into said outer cannula a biopsy aspiration device such that the distal tip of said biopsy aspiration device is extended into marrow, said biopsy aspiration device comprising:
 - an elongated cannula body having a proximal end, a distal tip, and a linear longitudinal axis;
 - a lumen running longitudinally through the interior of said cannula body, said lumen terminating at a proximal opening and terminating at a single laterally oriented distal opening immediately adjacent to the distal tip;

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wherein said distal tip of said cannula body comprises an arcuate curved surface on the side opposite to said laterally oriented distal opening, said arcuate curved surface terminating at said distal opening;

- (d) attaching an aspiration source to the proximal end of said biopsy aspiration device; and
- (e) withdrawing a sample of marrow from a marrow sampling site.

13.(Original) The method according to claim 12 further comprising the step of rotating said biopsy aspiration device within said outer cannula thereby repositioning the laterally oriented distal opening within the marrow sampling site.

14.(Original) The method according to claim 12 further comprising:

- (f) removing the biopsy aspiration device from the outer cannula; and
- (g) further advancing the outer cannula into the bone to obtain a core sample.

15.(Previously Presented) The bone biopsy system according to claim 6, further comprising:
an outer cannula hub connected to a proximal portion of said outer cannula; and
an inner cannula hub connected to the proximal end of said elongated cannula body;
wherein the hubs are configured to establish a substantially air tight seal upon assembly of the elongated cannula body within the outer cannula.

16.(Previously Presented) The bone biopsy system according to claim 6, wherein the outer cannula terminates at a beveled distal end.

17.(New) A bone biopsy system comprising:
a handle portion;
an outer cannula coupled to said handle portion and defining a distal tip opposite said handle portion; and

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a bone biopsy aspiration device configured to obtain a bone marrow sample and comprising:

an elongated cannula body adapted to be removably received within said outer cannula, said elongated cannula body defining a proximal side, a distal tip, and a lumen,

wherein said lumen is formed to extend longitudinally through an interior of said elongated cannula body, terminating at a proximal opening and at a single laterally oriented distal opening immediate adjacent said distal tip of said elongated cannula body,

and further wherein said distal tip of said elongated cannula body includes an arcuate curved surface on a side opposite of said distal opening, said arcuate curved surface terminating at said distal opening;

wherein said system is configured to provide a sampling state in which said elongated cannula body is inserted within said outer cannula and said proximal side is proximate said handle portion, said distal tip of said elongated cannula body extending distally beyond said distal tip of said outer cannula in said sampling state.